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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/603,941	06/27/2000	Zhenan Bao	BAO 16-25-12	4437

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EXAMINER
ECKERT II, GEORGE C

ART UNIT	PAPER NUMBER
2815	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/603,941	Applicant(s) Bao et al.
	Examiner George C. Eckert II	Art Unit 2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Oct 4, 2001*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above, claim(s) *13-18* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-12 and 19* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *Jun 27, 2000* is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Election/Restriction

1. Claims 13-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a field effect transistor as claimed in claims 1, 10 and 19 must be shown or the feature canceled from the claims. No new matter should be entered.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claims 1 and 10, though both claims cite a field effect transistor, neither claim cites even the basic elements of a transistor, namely, a gate, source and drain. Rather, the claims merely cite a substrate and an active dielectric layer disposed over the substrate wherein the substrate is suitable for an organic FET. But this does not make clear what structure the final device is to have. That is, the claim has not made clear if the active

dielectric layer is the gate oxide for the FET or if the FET is formed and the active dielectric layer is formed above it or any of several other options. In short, the claims merely claim a substrate for an organic FET and a dielectric layer, having a high-dielectric strength, formed thereon.

With regard to claim 19, though this claim does cite the basic elements of a FET, it does not make clear how the elements are structurally configured, namely because of the antecedent basis problem on lines 4-5. The claim states that a gate is formed on a substrate, an insulating layer is also formed over the substrate, and an active semiconductor layer is formed on the insulating layer (thus implying a bottom gate thin film device). However, the claim then cites on lines 4-5 certain specifics about *the* active dielectric layer. However, a dielectric layer was not earlier cited. Moreover, it is not clear if the active dielectric layer is the insulating layer that was earlier claimed or a different layer. As such, claim 19 does not make clear what applicant considers to be the invention.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-4, 6-12 and 19 (all claims as best understood) are rejected under 35 U.S.C. 102(e) as being anticipated by US 5,953,627 to Carter et al. Carter et al. teach, with

reference to figures 1-5, the formation of a silsesquioxane dielectric layer 6 (10) above a substrate 2 which is suitable for organic FETs. With regard to claim 2, Carter et al. teach that the silsesquioxane precursor may comprise alkyl(methyl) phenyl groups (col. 2, lines 45-48). With regard to claim 4, Carter et al. teach that the dielectric film has a dielectric constant of greater than 2 (see the various examples in col. 5, lines 11-14). With regard to claims 3, 6-9, 11 and 12, these claims are directed to the process by which the product is formed. Note that a "product by process" claim is directed to the product per SE, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per SE which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw make clear. Instantly, these claims do not structurally differentiate over that taught by Carter et al. and as such are anticipated.

Regarding the limitations that a FET is formed on the substrate, Carter et al. teach the formation of silsesquioxane to improve the characteristics of integrated circuits which inherently include transistors.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 5 (as best understood) is rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. in view of Fergason et al. Carter et al. taught the formation of silsesquioxane on a substrate but did not teach that the substrate was an indium-tin oxide (ITO) coated plastic substrate. Fergason et al. teach the use of an ITO coated plastic substrate (col. 9, lines 3-9). Carter et al. and Fergason et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use a plastic substrate coated with ITO. The motivation for doing so is that a plastic substrate is more flexible than a conventional glass substrate and less prone to cracking. Therefore, it would have been obvious to combine Carter et al. with Fergason et al. to obtain the invention of claim 5.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stein et al. is cited as teaching the formation of plastic substrates having silsesquioxane and ITO coatings.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Eckert II whose telephone number is (703) 305-2752.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Eddie Lee can be reached on (703) 308-1690. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

GCEckert

George C. Eckert II
Patent Examiner
Art Unit - 2815
December 31, 2001